

WHAT IS CLAIMED IS:

1. A polymer complex comprising the reaction product of one or more polymers having a terminal or pendant hydroxyl group, or a terminal or pendent carboxyl group, or combinations thereof, with at least one metal complex and at least one alkyl phosphate.
2. The polymer complex of Claim 1, wherein said metal complex is metal orthoester.
3. The polymer complex of Claim 2, wherein said metal orthoester has the formula $\text{metal}(\text{OR})_4$, wherein each of the four R groups is independently an alkyl group.
4. The polymer complex of Claim 3, wherein said alkyl group is a C_1 to C_8 alkyl group.
5. The polymer complex of Claim 3, wherein said alkyl group is a C_3 to C_4 alkyl group.
6. The polymer complex of Claim 2, wherein said metal orthoester is tetraisopropyltitanate.
7. The polymer complex of Claim 1, wherein said alkyl phosphate is a monoalkyl phosphate having the formula $\text{R}_1\text{PO}(\text{OH})_2$ or a dialkylphosphate having the formula $(\text{R}_2\text{O})(\text{R}_3\text{O})\text{PO}(\text{OH})$, wherein each of R_1 , R_2 and R_3 is independently an alkyl.
8. The polymer complex of Claim 7, wherein said alkyl group is a C_1 to C_{10} alkyl group
9. The polymer complex of Claim 7, wherein said alkyl group is a C_1 to C_5 alkyl group.
10. The polymer complex of Claim 1, wherein said alkyl phosphate is amyl acid phosphate.
11. The polymer complex of Claim 1, wherein said polymer is natural or synthetic polymer.
12. The polymer complex of Claim 1, wherein said polymer is selected from the group consisting of polyurethane, polyurethane-urea, polyamide, polyester, polyacrylate, nitrocellulose and ketone-formaldehyde copolymer.

305 13. An adhesion promoting agent in an ink or coating composition comprising the reaction product of one or more polymers having a terminal or pendant hydroxyl group, or a terminal or pendent carboxyl group, or combinations thereof, with at least one metal complex, and at least one alkyl phosphate.

310 14. The adhesion promoting agent of Claim 13 wherein said agent also promotes viscosity stability in an ink or coating composition.

315 15. The agent of Claim 13, wherein said metal complex is metal orthoester.

320 16. The agent of Claim 15, wherein said metal orthoester has the formula metal(OR)₄, wherein each of the four R groups is independently an alkyl group.

325 17. The agent of Claim 16, wherein said alkyl group is a C₁ to C₈ alkyl group.

330 18. The agent of Claim 16, wherein said alkyl group is a C₃ to C₄ alkyl group.

335 19. The agent of Claim 15, wherein said metal orthoester is tetraisopropyltitanate.

20. The agent of Claim 13, wherein said alkyl phosphate is a monoalkyl phosphate having the formula R₁PO(OH)₂ or a dialkylphosphate having the formula (R₂O)(R₃O)PO(OH), wherein each of R₁, R₂ and R₃ is independently an alkyl.

21. The agent of Claim 20, wherein said alkyl group is a C₁ to C₁₀ alkyl group.

22. The agent of Claim 20, wherein said alkyl group is a C₁ to C₅ alkyl group.

23. The agent of Claim 13, wherein said alkyl phosphate is amyl acid phosphate.

24. The agent of Claim 13, wherein said polymer is natural or synthetic polymer.

25. The agent of Claim 13, wherein said polymer is selected from the group consisting of polyurethane, polyurethane-urea, polyamide, polyester, polyacrylate, nitrocellulose and ketone-formaldehyde copolymer.

26. An ink or coating composition containing an adhesion promoting agent comprising the reaction product of one or more polymers having a terminal or pendant hydroxyl group, or a terminal or pendent carboxyl group, or combinations thereof, with at least one metal complex and at least one alkyl phosphate.

27. The composition of Claim 26, wherein said metal complex is metal orthoester.

340 28. The composition of Claim 27, wherein said metal orthoester has the formula metal(OR)₄, wherein each of the four R groups is independently an alkyl group.

29. The composition of Claim 28, wherein said alkyl group is a C₁ to C₈ alkyl group.

30. The composition of Claim 28, wherein said alkyl group is a C₃ to C₄ alkyl group.

345 31. The composition of Claim 27, wherein said metal orthoester is tetraisopropyltitanate.

32. The composition of Claim 26, wherein said alkyl phosphate is a monoalkyl phosphate having the formula R₁PO(OH)₂ or a dialkylphosphate having the formula (R₂O)(R₃O)PO(OH), wherein each of R₁, R₂ and R₃ is independently an alkyl.

350 33. The composition of Claim 32, wherein said alkyl group is a C₁ to C₁₀ alkyl group

34. The composition of Claim 32, wherein said alkyl group is a C₁ to C₅ alkyl group.

355 35. The composition of Claim 25, wherein said alkyl phosphate is amyl acid phosphate.

36. The composition of Claim 26, wherein said polymer is natural or synthetic polymer.

360 37. The composition of Claim 26, wherein said polymer is selected from the group consisting of polyurethane, polyurethane-urea, polyamide, polyester, polyacrylate, nitrocellulose and ketone-formaldehyde copolymer.

365 38. A method of improving the adhesion performance of an ink or coating composition comprising adding to said composition an agent comprising the reaction product of one or more polymers having a terminal or pendent hydroxyl group, or a terminal or pendent carboxyl group, or combinations thereof, and at least one metal complex and at least one alkyl phosphate.

39. The method of Claim 38 wherein the viscosity stability of an ink or coating composition is also enhanced.

370 40. The method of Claim 38, wherein said metal complex is metal orthoester.

41. The method of Claim 40, wherein said metal orthoester has the formula

metal(OR)₄, wherein each of the four R groups is independently an alkyl group.

375 42. The method of Claim 41, wherein said alkyl group is a C₁ to C₈ alkyl group.

43. The method of Claim 41, wherein said alkyl group is a C₃ to C₄ alkyl group.

380 44. The method of Claim 40, wherein said metal orthoester is tetraisopropyltitanate.

45. The method of Claim 38, wherein said alkyl phosphate is a monoalkyl phosphate having the formula R₁PO(OH)₂ or a dialkylphosphate having the formula (R₂O)(R₃O)PO(OH), wherein each of R₁, R₂ and R₃ is independently an alkyl.

385 46. The method of Claim 45, wherein said alkyl group is a C₁ to C₁₀ alkyl group.

47. The method of Claim 45, wherein said alkyl group is a C₁ to C₅ alkyl group.

390 48. The method of Claim 38, wherein said alkyl phosphate is amyl acid phosphate.

49. The method of Claim 38, wherein said polymer is natural or synthetic polymer.

395 50. The method of Claim 38, wherein said polymer is selected from the group consisting of polyurethane, polyurethane-urea, polyamide, polyester, polyacrylate, nitrocellulose and ketone-formaldehyde copolymer.

400 51. A method of stabilizing the viscosity of an ink or coating composition comprising adding to said composition an agent comprising the reaction product of one or more polymers having a terminal or pendant hydroxyl group, or a terminal or pendent carboxyl group, or combinations thereof, with at least one metal complex and at least one alkyl phosphate.

52. The method of Claim 51, wherein said metal complex is metal orthoester.

53. The method of Claim 51, wherein said metal orthoester has the formula metal(OR)₄, wherein each of the four R groups is independently an alkyl group.

405 54. The method of Claim 53, wherein said alkyl group is a C₁ to C₈ alkyl group.

55. The method of Claim 53, wherein said alkyl group is a C₃ to C₄ alkyl group.

410 56. The method of Claim 51, wherein said metal orthoester is tetraisopropyltitanate.

57. The method of Claim 51, wherein said alkyl phosphate is a monoalkyl phosphate having the formula R₁PO(OH)₂ or a dialkylphosphate having the formula (R₂O)(R₃O)PO(OH), wherein each of R₁, R₂ and R₃ is independently an alkyl.

415 58. The method of Claim 57, wherein said alkyl group is a C₁ to C₁₀ alkyl group.

59. The method of Claim 57, wherein said alkyl group is a C₁ to C₅ alkyl group.

420 60. The method of Claim 51, wherein said alkyl phosphate is amy acid phosphate.

61. The method of Claim 51, wherein said polymer is natural or synthetic polymer.

425 62. The method of Claim 51, wherein said polymer is selected from the group consisting of polyurethane, polyurethane-urea, polyamide, polyester, polyacrylate, nitrocellulose and ketone-formaldehyde copolymer.